Equipment
- RS232 interface
- RS485 interface
- CANopen, or
- Profinet DP
- 10 digital inputs (8 programmable)
- 3 digital outputs (2 programmable)
- Clock/direction interface
- 2 Encoder inputs (incremental)

Functions
- Operation of 2-phase brushless synchronous motors
- Operation of 2-phase synchronous linear motors
- Operation of brushed DC servo motors
- Operation of stepper motors
- Torque, force, speed, and positioning control
- Interpolation via CANopen

Control Signals

| Digital inputs | V | 24 |
| Digital outputs | V | 24 |

| Analogue input | -10 V ... +10 V | 10 bit resolution |
| Analogue monitor outputs | 0 ... 5 V | 8 bit resolution |

DC Supply

| Power supply | VDC | 24 ... 70 |
| Recommended fuse for power supply | A | 10 (slow) |
| Logic supply | VDC | 24 (18-30) |
| Recommended fuse for logic supply | A | 3 (slow) |

Data of Power Output Stage

| Maximum effective current per phase | A_{Ems} | 5.6 |
| Maximum phase current | A_{DC} | 8 |
| Rated output current | A_{Ems} | 4.2 |
| Maximum output voltage | V_{Ems} | 70 |
| Rated output voltage | V_{DC} | 60 |
| Minimum inductivity of motor winding | mH | 0.5 |
| Maximum length of motor cable | m | 10 |
| Frequency of output current ripple | kHz | 16.4 |

Data of Brake Control

| Output voltage (depending on logic supply) | V_{DC} | 24 |
| Output voltage reduced | V_{DC} | 12 |
| Output current 100 ms/permanent | A | 0.8 / 0.5 |

Dimensions and Weights

| Dimensions W x H x D | mm | 87 x 200 x 50 (without mating connector) |
| Weight | kg | 0.5 |
| Housing | Aluminium passivated, in conformance with RoHS |
| Cable clamping and strain relief | metal clamps, max. cable diameter 15 mm |

Ambient Conditions

| Class | 3K3 acc. to EN 50178 |
| Ambient temperature during operation with rated load | 5 ... 40 °C |
| Storage temperature | - 10 ... 70 °C |
| Degree of humidity (non-condensing) | max. 95% of rel. humidity |
| Cooling | mounting on supporting plate |
| Installation altitude | max. 1500 m above mean sea level without power reduction |
| Mounting position | The technical data refer to a vertical mounting position |
| Protection class | IP20, pollution degree 2 |
| Applied standards for CE | EMC acc. to EN61800-3, safety acc. to EN61800-5-1 |
| Applied standards for UL | UL508C |
**Basic Functions**

- Digital speed and position control with position, speed, and torque limiting
- Digital filter functions effective on resonant loads
- Parameterizable velocity profiles with jerk limiting
- Short-circuit, voltage, temperature, encoder, tracking error and I²t monitoring
- Parameterisation via RS232, RS485, CANopen, or Profibus DP
- Scalable analogue input for any setpoint
- Scalable analogue monitors for any actual value
- Intelligent control of a holding brake with automatic voltage reduction
- Limit switch and reference sensor evaluation, various reference point approach modes
- Enabling of output stage and reset of fault conditions via digital inputs
- Readiness for operation message via digital output
- Setting of field bus node address via DIP switch
- Status indication via 4 LEDs

**Positioning Control on Field Bus**

- Setpoint setting via RS232, RS485, CANopen, or Profibus DP
- Point-to-point control
- Path interpolation via CANopen

**Master / Slave Positioning**

- Parameterisable electric gearbox
- Master position via encoder signals or CANopen

**Positioning with Clock / Direction Setpoint**

- Scalable setpoint setting via RS422 for clock / direction signals

**Positioning with Digital I/O Interface**

- 256 motion profiles storable
- 8 digital inputs
- 2 digital outputs
- Event-based control concept

**Joystick Operation**

- Parameterisable joystick table for speed or position with 256 entries
- Joystick connection to +/-10 V analogue input

**Speed Setting with Analogue Setpoint**

- Scalable speed setpoint via +/-10 V analogue input
- 10 bit resolution
Connections

- Digital I/O PLC interface
- Running configurable motion profiles
- Controlling/monitoring of motion ranges / profiles, homing

Output 1
Output 2
Input 1
Input 2
Input 3
Input 4
Input 5
Limit switch pos.
Limit switch neg.
Home switch
Signal ground
Analog input +
Analog input -
Signal ground

Monitor 1
Monitor 2
Ready
Error reset
Enable powerstage
Supply +24 V
Supply ground

Brake +
Brake -
Motor phase A
Motor phase /A
Motor phase B
Motor phase /B

Supply ground
Supply 24 V
DC bus ground
DC bus +

• Analog command input for position and velocity
  10 bit resolution

• 2 analog monitors scalable, configurable
  8 bit resolution

• Digital inputs and outputs:
  • Powerstage enable
  • Error reset
  • Ready

• Monitoring supply voltage, reset logic

• Intelligent brake control providing automatic voltage reduction

• Control of the powerstage enable
  Monitoring:
  • Short circuit
  • Overvoltage and undervoltage,
  • Overtemperature powerstage
Interfaces

RS232 serial interface for parameter setting, configuration, control, interface for setup by a PC

Field bus interface: CANopen (DS 402), RS 485 (published protocols) or Profibus DP

ID setting for serial network operation

4 LEDs for indication of device status

quadrature encoder input: configurable electronic gear box or clock/direction

quadrature encoder input: for commutation, current, speed and position control

RS232

1:1 direct connection to a PC COM

Pin | Signal at PC
---|---
1 | DCD
2 | RxD
3 | TxD
4 | DTR
5 | GND
6 | DSR
7 | RTS
8 | CTS
9 | RI

RS422

Code switch for Network-ID

0...15

TTL
galvanic insulation only with CANopen or Profibus

Status LED

24 V (gn) ERR (red)
BUS (gn) RUN (gn)

RS485

Input Master Encoder

Pin | Incremental | Clock/direction
---|---|---
1 | +5V, max. 200 mA
2 | A | Clock
3 | B | Direction
4 | N | 
5 | | 
6 | GND | GND
7 | /A | /GND
8 | /B | /Clock
9 | /N | /Direction

Input Motor Encoder

Pin | Signal
---|---
1 | +5V
2 | A
3 | B
4 | N
5 | nc
6 | GND
7 | /A
8 | /B
9 | /N